

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
21 December 2000 (21.12.2000)

PCT

(10) International Publication Number
WO 00/77334 A1

(51) International Patent Classification⁷: E05F 13/00, 13/04

(21) International Application Number: PCT/SE00/01249

(22) International Filing Date: 14 June 2000 (14.06.2000)

(25) Filing Language: Swedish

(26) Publication Language: English

(30) Priority Data:
9902237-8 14 June 1999 (14.06.1999) SE

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

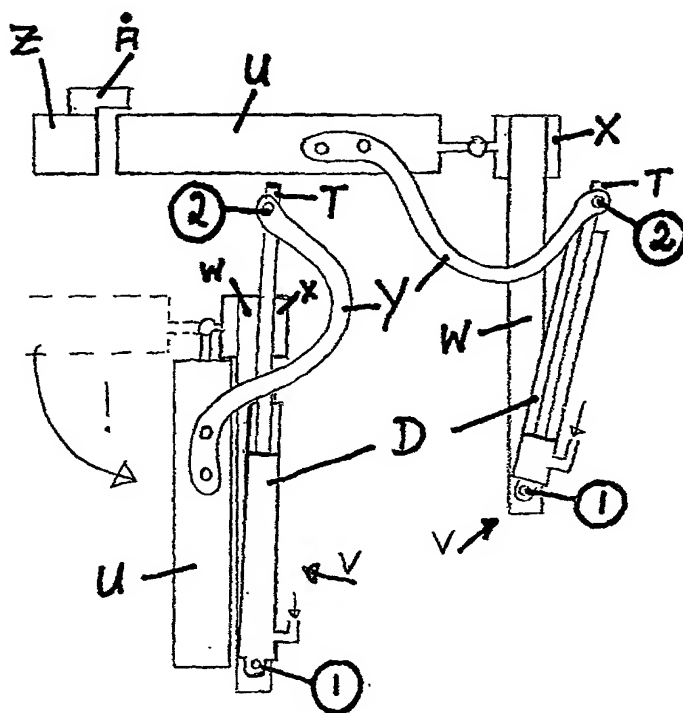
(71) Applicant and
(72) Inventor: POTTHOFF, Klaus [SE/SE]; Storgatan 17, S-352 31 Växjö (SE).

Published:
— With international search report.

(74) Agent: SIEBMANN, H.; Gotapatent AB, Box 154, S-561 22 Huskvarna (SE).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: APPARATUS FOR OPERATING GATES AND THE LIKE



(57) Abstract: The invention relates to an apparatus for operating a gate (U), which apparatus is provided with a pressure generating unit, which can be mounted in the ground and which is provided with a hydraulic cylinder (A) as well as restoring springs (O) and which by means of a hydraulic circuit system actuates an opening and closing mechanism for said gate. According to the invention said cylinder (A) is designed as a primary compression cylinder, which hydraulically is connected partly to an accumulator tank (C), to accumulate a portion of the force as an overpressure, and partly to a secondary opening cylinder (D), to open the gate (U) against the force of a closing valve (V). The overpressure in the liquid is released through a duct to an expansion tank (B) through a check valve (G) in order to delay the discharge process, an effect being obtained only after the fact, that a car has passed the apparatus and the gate and that the overpressure in the expansion tank has started to decrease. Pressure peaks from very heavy cars and a second and a third axle on a car respectively will be released directly through an overpressure valve (I) back into the expansion tank.

WO 00/77334 A1

ABSTRACT

The invention relates to an apparatus for operating a gate (U), which apparatus is provided with a pressure generating unit, which can be mounted in the ground and which is provided with a hydraulic cylinder (A) as well as restoring springs (O) and which by means of a hydraulic circuit system actuates an opening and closing mechanism for said gate. According to the invention said cylinder (A) is designed as a primary compression cylinder, which hydraulically is connected partly to an accumulator tank (C), to accumulate a portion of the force as an overpressure, and partly to a secondary opening cylinder (D), to open the gate (U) against the force of a closing valve (V). The overpressure in the liquid is released through a duct to an expansion tank (B) through a check valve (G) in order to delay the discharge process, an effect being obtained only after the fact, that a car has passed the apparatus and the gate and that the overpressure in the expansion tank has started to decrease. Pressure peaks from very heavy cars and a second and a third axle on a car respectively will be released directly through an overpressure valve (I) back into the expansion tank.